LSNReviews

From: Miriam Juckett [mjuckett@cnwra.swri.edu]
Sent: Friday, June 30, 2006 5:41 PM
To: Roberto Pabalan; James Myers; English Pearcy
Subject: Recipe
Attachments: USGS Dust Smpl Ion Element Analyses.xls

The recipe I plan to use is on the "recipe" tab. Speak now or forever hold your peace if this isn't a good recipe or I did the math wrong.
Bobby and Jim- I noticed some errors I made in my previous charts, which have been corrected, so please use this as the most recent spreadsheet.
Thanks.

Miriam Juckett, Research Scientist
Southwest Research Institute
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road, San Antonio, TX 78238
Email: mjuckett@swri.org
Office: (210)522-3266

Properties Page

Return-path: <mjuckett@cnwra.swri.edu>
Received: from gerbil ([129.162.200.18])
 by rogain.cnwra.swri.edu (Sun ONE Messaging Server 6.0 (built Oct 29 2003))
 with ESMTP id <0J1P00M6Z08RRT30@rogain.cnwra.swri.edu>; Fri,
 30 Jun 2006 16:41:15 -0500 (CDT)
Date: Fri, 30 Jun 2006 16:41:04 -0500
From: Miriam Juckett <mjuckett@cnwra.swri.edu>
Subject: Recipe
To: Roberto Pabalan <rpabalan@cnwra.swri.edu>,
 James Myers <jmyers@cnwra.swri.edu>, English Pearcy <epearcy@cnwra.swri.edu>
Reply-to: mjuckett@cnwra.swri.edu
Message-id: <02e901c69c8d$e38761a0$12c8a281@cnwra.swri.edu>
Organization: CNWRA
MIME-version: 1.0
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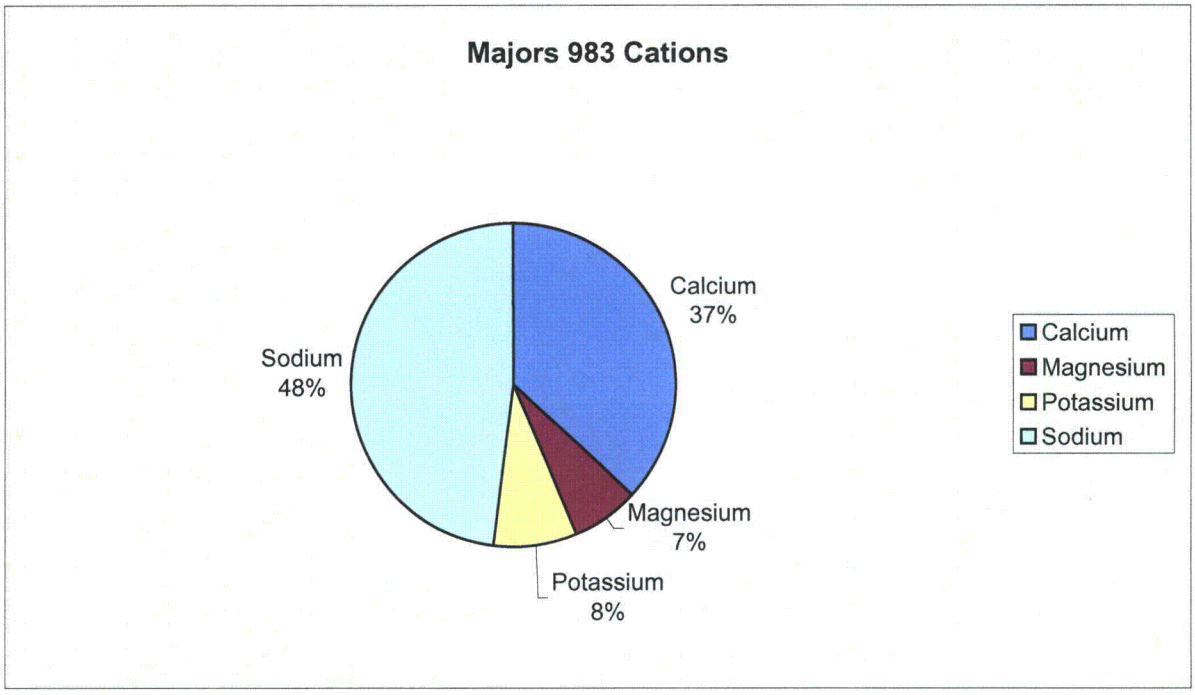
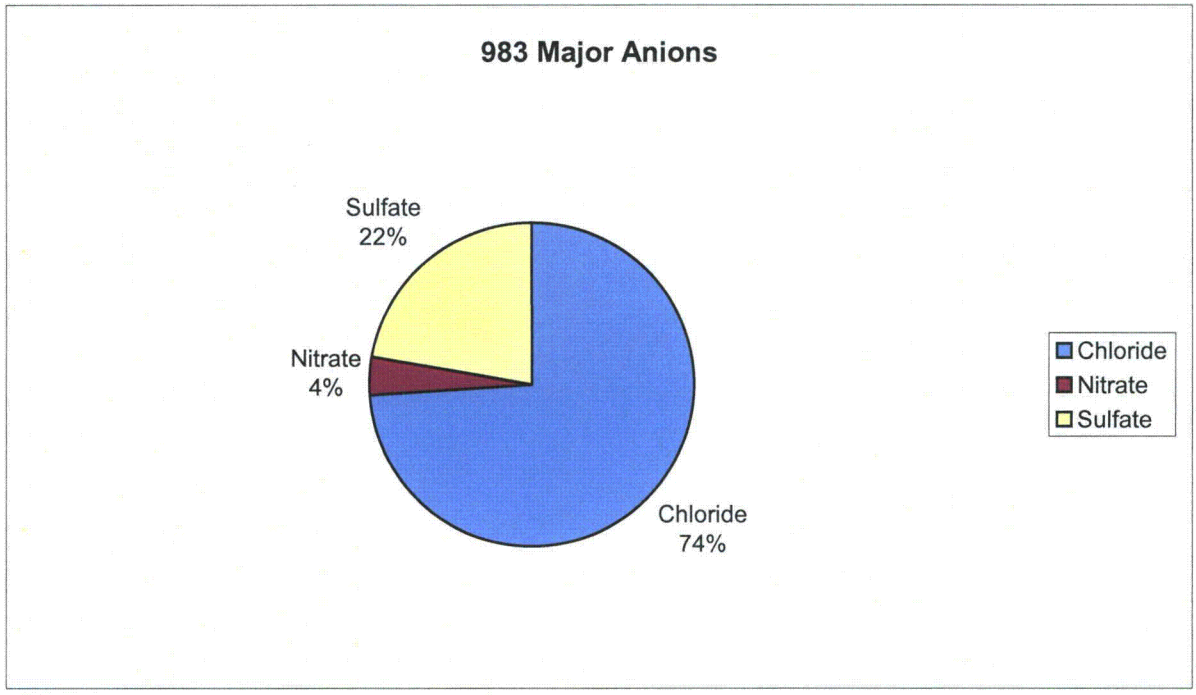
	Blank	982	983	803*	803-2	805	g/mol	Blank	982	983	803*	803-2	805
	ug/filter	mg/kg	mg/kg	mg/kg	ug/filter	mg/kg		mol/filter	mol/kg	mol/kg	mol/kg	mol/filter	mol/kg
Bromide		3.14	23.8				80		3.93E-05	2.98E-04			
Chloride	4.38	64.8	2350	1.07	41.4	8.59	35.5	1.23E-07	1.83E-03	6.62E-02	3.01E-05	1.17E-06	2.42E-04
Fluoride		8.43	14.1	1.09	1.68	1.4	19		4.44E-04	7.42E-04	5.74E-05	8.84E-08	7.37E-05
Nitrate	1.55	0.728	218		3.17/2.46	1.69	62	2.5E-08	1.17E-05	3.52E-03			2.73E-05
Phosphate				1.05		3.22	95				1.11E-05		3.39E-05
Sulfate	3.06	62.7	1920	5.74	119	19.6	96	3.19E-08	6.53E-04	2.00E-02	5.98E-05	1.24E-06	2.04E-04
Aluminum		0.444		5.42			27		1.64E-05		2.01E-04		
Arsenic					0.268		74.9					3.58E-09	
Barium			0.483		0.161		137.3			3.52E-06		1.17E-09	
Boron	7.46	2.1	3.03	0.581	5.51	0.72	10.8	6.91E-07	1.94E-04	2.81E-04	5.38E-05	5.10E-07	6.67E-05
Calcium	2.47	58.2	918	21.6	179	56.5	40	6.18E-08	1.46E-03	2.30E-02	5.40E-04	4.48E-06	1.41E-03
Iron			1.51	2.45			55.8			2.71E-05	4.39E-05		
Lithium		0.229	9.36		0.159		6.9		3.32E-05	1.36E-03		2.30E-08	
Magnesium		4.98	101	4.36	34.8	8.84	24.3		2.05E-04	4.16E-03	1.79E-04	1.43E-06	3.64E-04
Manganese			7.28	0.141			54.9			1.33E-04	2.57E-06		
Molybdenum		3.38	0.91				95.9		3.52E-05	9.49E-06			
Nickel			0.58				58.7			9.88E-06			
Phosphorus		0.777	0.956	1.45	2.38	3.87	31		2.51E-05	3.08E-05	4.68E-05	7.68E-08	1.25E-04
Potassium		45.3	205	12	111	31.2	39		1.16E-03	5.26E-03	3.08E-04	2.85E-06	8.00E-04
Silicon	8.82	20.8	21.9	47.7	125	42.9	28	3.15E-07	7.43E-04	7.82E-04	1.70E-03	4.46E-06	1.53E-03
Sodium	17.1	104	686	8.39	108	17.8	23	7.43E-07	4.52E-03	2.98E-02	3.65E-04	4.70E-06	7.74E-04
Strontium			6.35	0.153	1.76	0.465	87.6			7.25E-05	1.75E-06	2.01E-08	5.31E-06
Sulfur	1.15	25.8	483	3.67	43.5	8.01	32	3.59E-08	8.06E-04	1.51E-02	1.15E-04	1.36E-06	2.50E-04
Zinc			0.397				65.4			6.07E-06			
Sulfur as sulfa	1.15	25.8	483	3.67	43.5	8.01	96	1.2E-08	2.69E-04	5.03E-03	3.82E-05	4.53E-07	8.34E-05


Majors 983 Cations
Calcium
37%
Sodium
48%
Magnesium
7%
Potassium
8%
Calcium
Magnesium
Potassium
Sodium

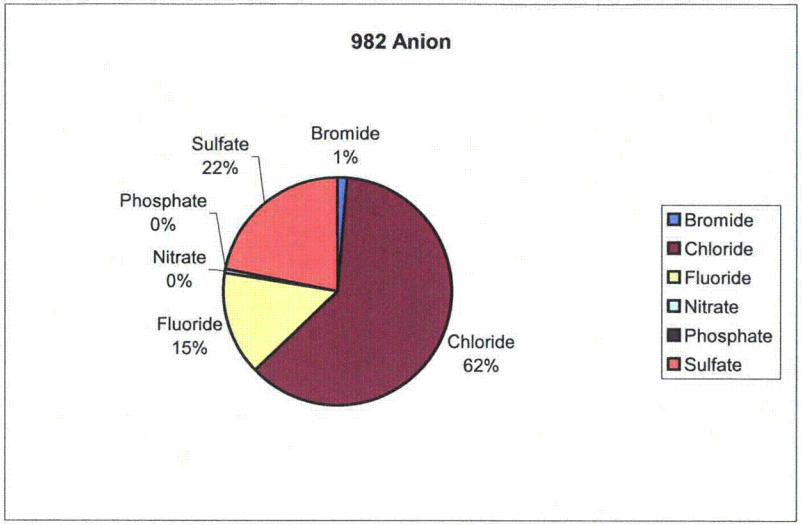

983 Major Anions
Sulfate
22%
Nitrate
4%
Chloride
74%
Chloride
Nitrate
Sulfate

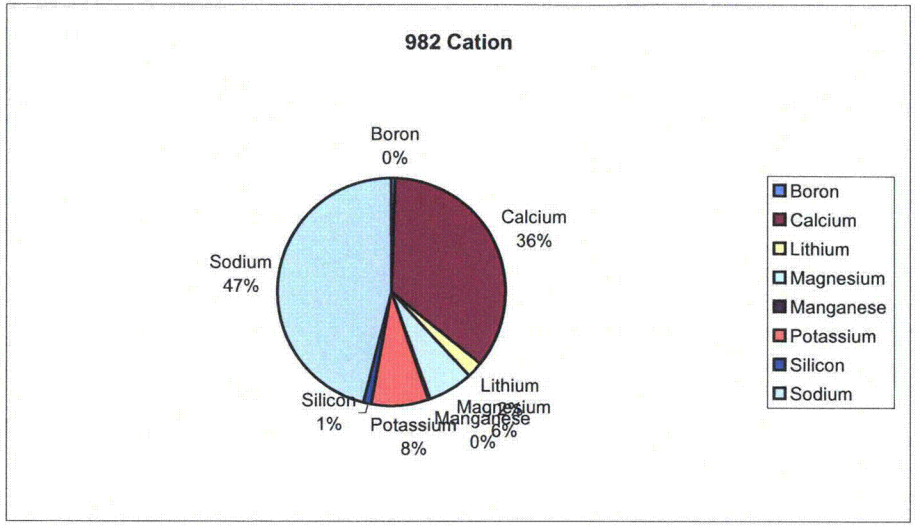
	Total Charge assuming 100 mmol
Na	48
Ca	74
Mg	14
K	8
	144

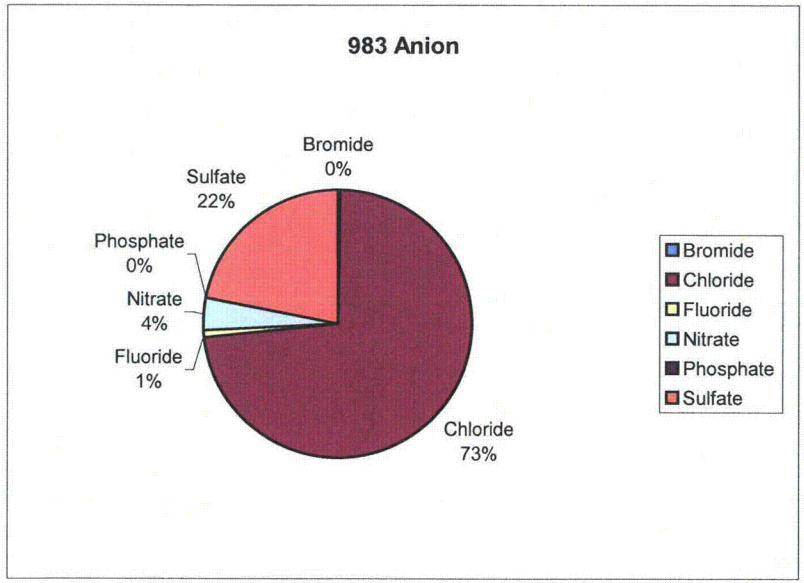
	Total Char	Proportionally balanced to match cation charge
SO4	44	51.92
NO3	4	4.72
Cl	74	87.32
	122	143.96

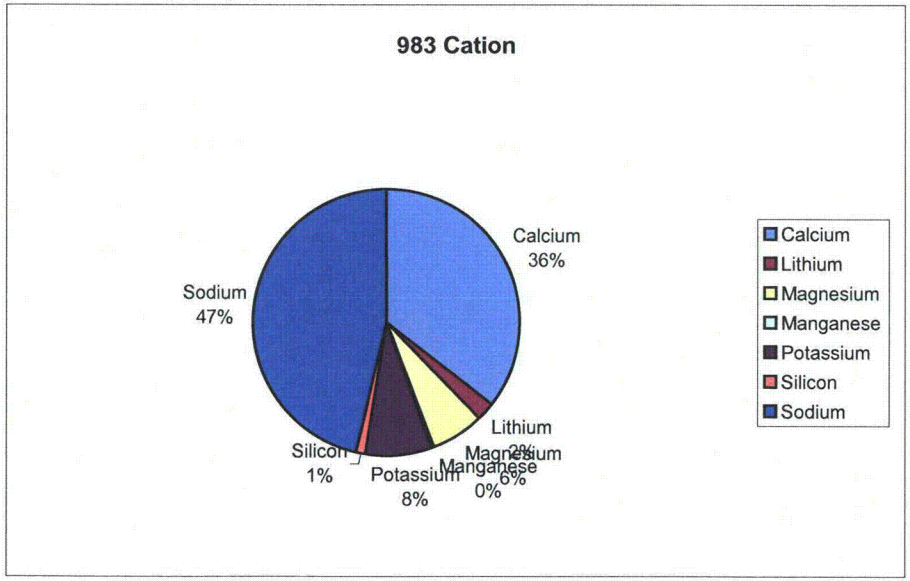
Na+	48 mmol e-	(SO4)2-	48 mmol e- 24 mmol SO4
K+	3.92 mmol e-	(SO4)2-	3.92 mmol e- 1.96 mmol SO4
K+	4.08 mmol e-	(NO3)-	4.08 mmol e-
Ca2+	0.64 mmol e- 0.32 mmol	(NO3)-	0.64 mmol e-
Ca2+	73.36 mmol e- 36.68 mmol	Cl-	73.36 mmol e-
Mg2+	14 mmol e- 7 mmol	Cl	14 mmol

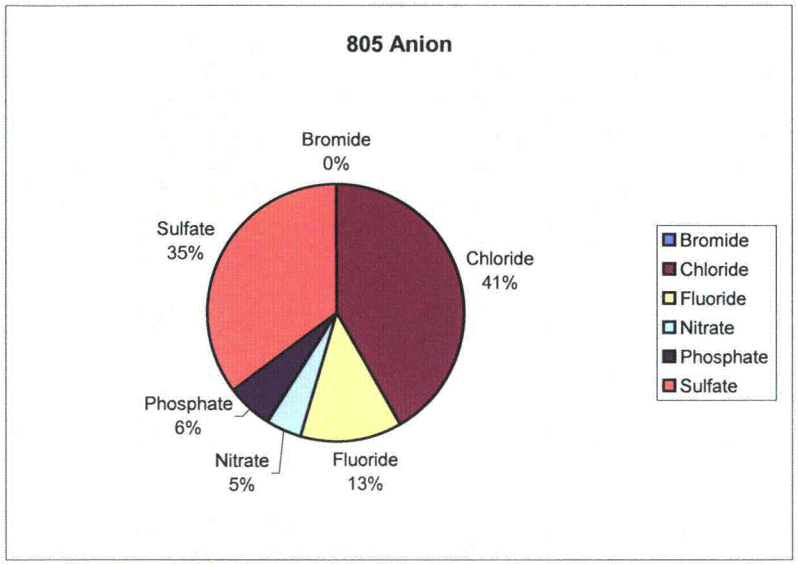
In sum:	MW	In Grams:
24 mmol of Na2SO4	142	3.408
1.96 mmol of K2SO4	174	0.34104
4.08 mmol of KNO3	101	0.41208
0.32 mmol of Ca(NO3)2	164	0.05248
36.68 mmol CaCl2	110	4.0348
7 mmol of MgCl2	95.3	0.6671

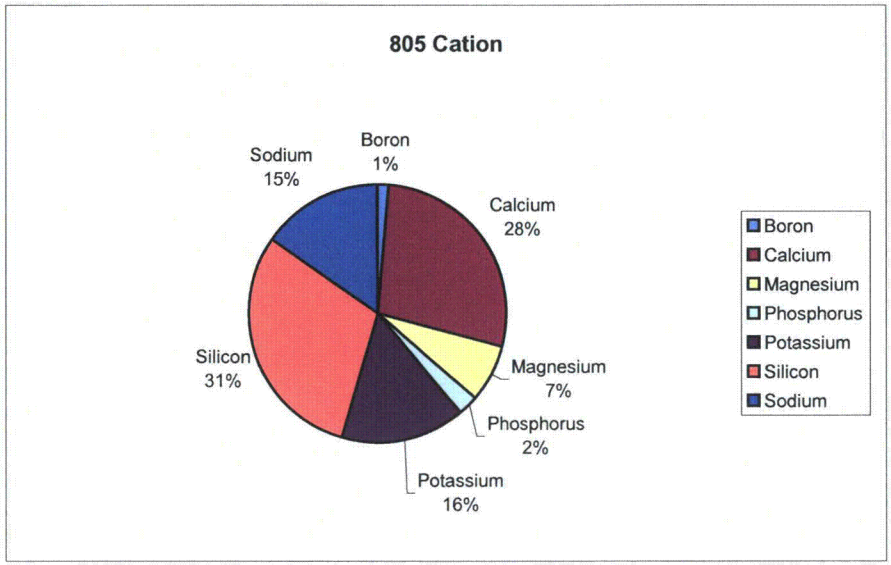

982 Anion
Bromide 1%
Chloride 62%
Fluoride 15%
Nitrate 0%
Phosphate 0%
Sulfate 22%
Bromide
Chloride
Fluoride
Nitrate
Phosphate
Sulfate


982 Cation
Boron 0%
Calcium 36%
Lithium 6%
Magnesium 0%
Manganese 8%
Potassium 1%
Silicon 47%
Sodium
Boron
Calcium
Lithium
Magnesium
Manganese
Potassium
Silicon
Sodium


983 Anion
Bromide 0%
Chloride 73%
Fluoride 1%
Nitrate 4%
Phosphate 0%
Sulfate 22%
Bromide
Chloride
Fluoride
Nitrate
Phosphate
Sulfate


983 Cation
Calcium 36%
Lithium 2%
Magnesium 6%
Manganese 0%
Potassium 8%
Silicon 1%
Sodium 47%
Calcium
Lithium
Magnesium
Manganese
Potassium
Silicon
Sodium


805 Anion
Bromide
0%
Chloride
41%
Fluoride
13%
Nitrate
5%
Phosphate
6%
Sulfate
35%
Bromide
Chloride
Fluoride
Nitrate
Phosphate
Sulfate


805 Cation
Boron
1%
Calcium
28%
Magnesium
7%
Phosphorus
2%
Potassium
16%
Silicon
31%
Sodium
15%
Boron
Calcium
Magnesium
Phosphorus
Potassium
Silicon
Sodium